TOWN OF CHATHAM

Summary of

Draft Comprehensive Wastewater Management Plan/
Draft Environmental Impact Report (DCWMP/DEIR)
and

Notice of Project Change

Presentation to the

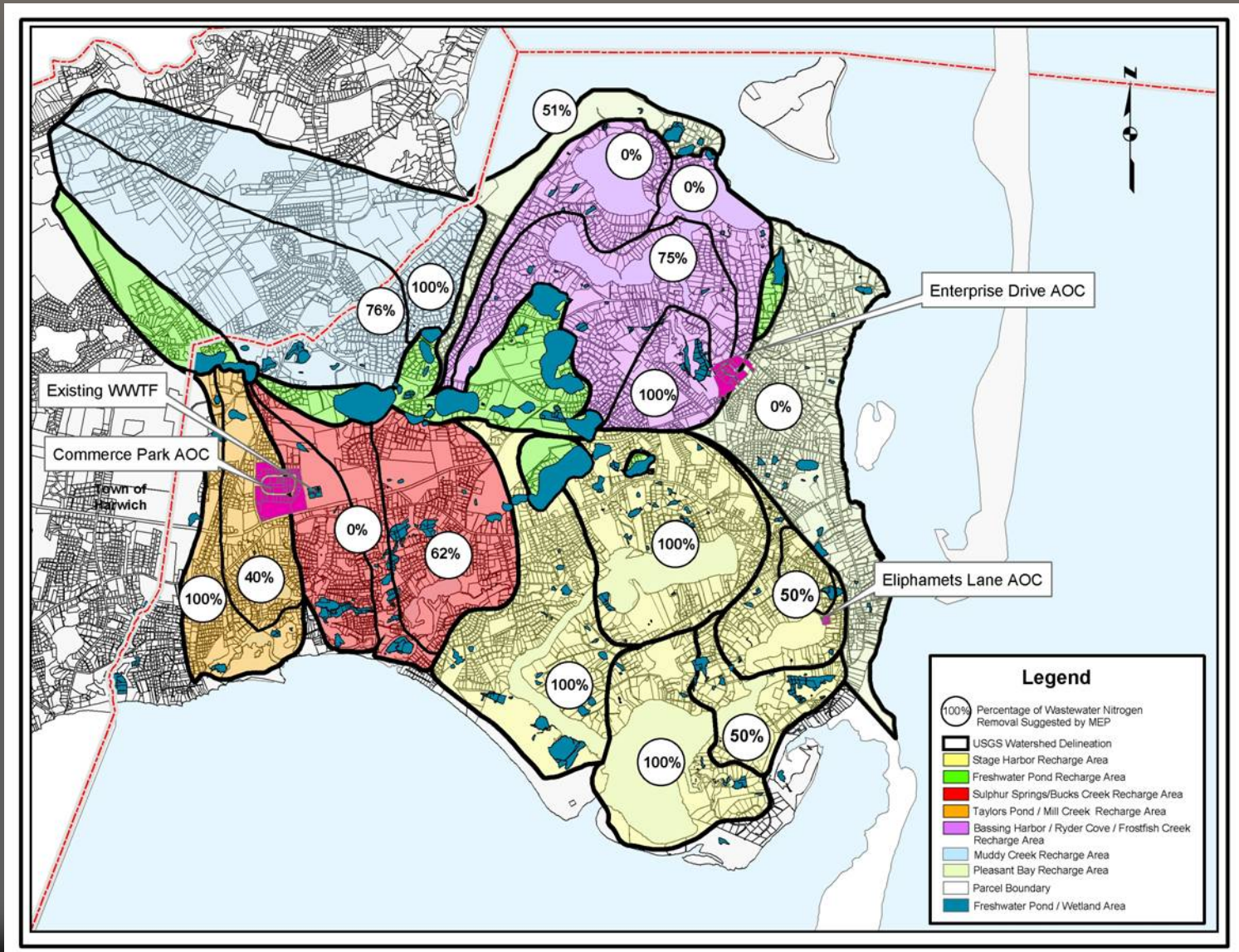
Citizens Advisory Committee on

August 16, 2007

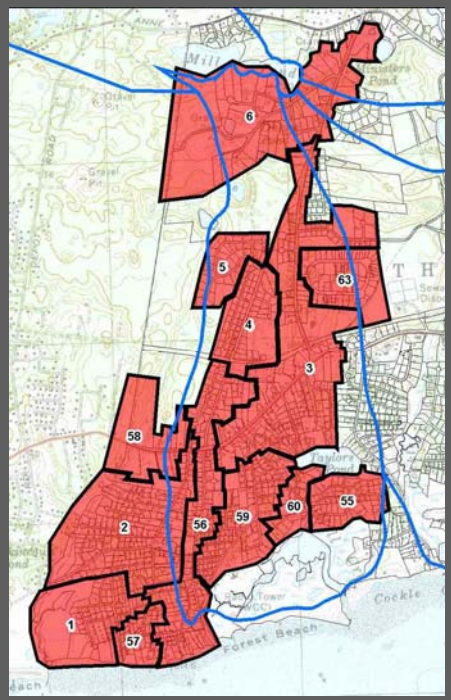
Presentation Outline

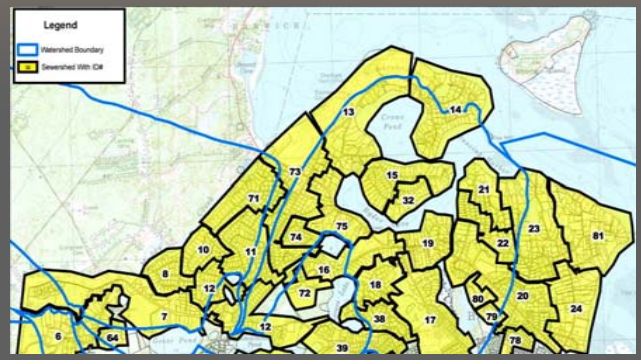
- Alternatives Evaluation Summary
  - Watershed evaluations
  - Hydrogeologic and site evaluations
  - Alternative plan formation and evaluation
- The Recommended Plan
- Next Steps

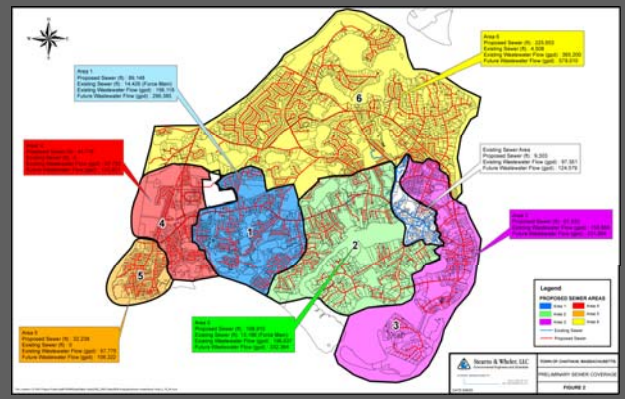
Alternatives Evaluation Summary:
Watershed Evaluations

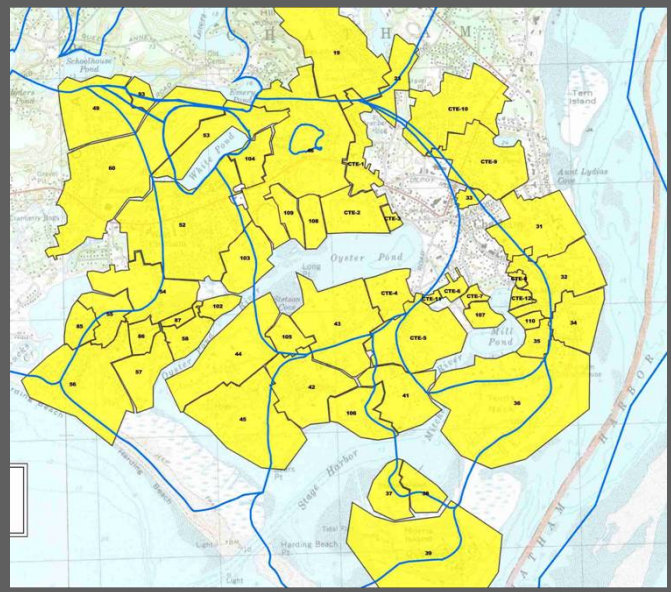


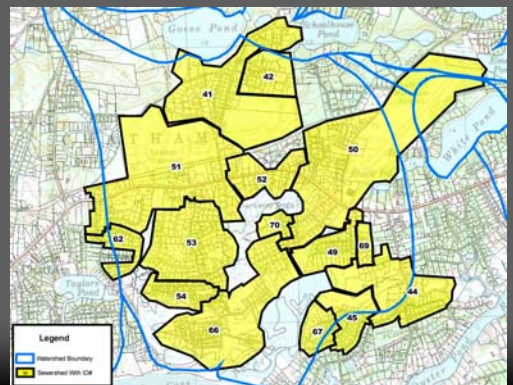
Alternatives Evaluation Summary:
Watershed Evaluations











Alternatives Evaluation Summary:
Watershed Evaluations

Summary of Typical Nitrogen Removals for the Wastewater Management Options		
Technology	Typical Nitrogen Concentration in the Effluent	Typical Percent Removal
Title 5 Septic System	20 to 40 mg/l	23%
Individual Nitrogen Removal Septic System	15 to 25 mg/l	50%
Community/Cluster System	5 to 15 mg/l	75%
Upgraded Chatham WWTF	3 mg/l	93%

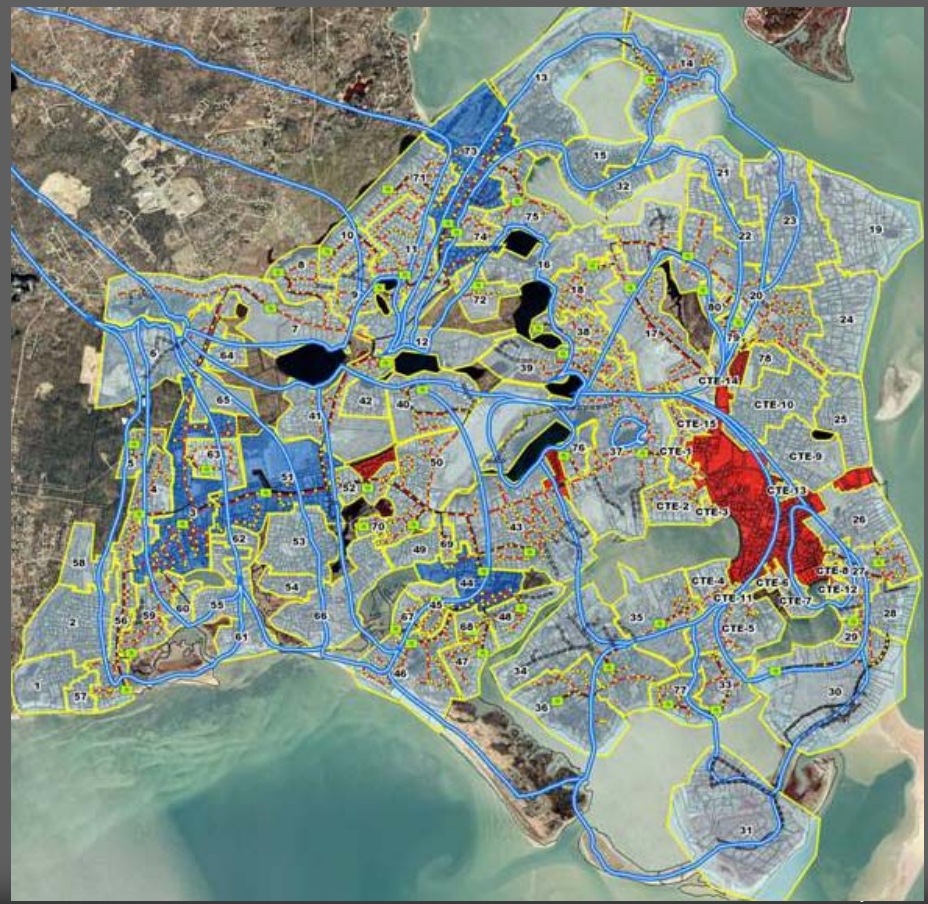
Alternatives Evaluation Summary:
Watershed Evaluations

Summary of Findings

- Large areas of Chatham need to remove > 50% of the wastewater nitrogen to remediate embayment water quality and the related water resources
- This nitrogen removal performance is best met with collection and treatment at an Upgraded Chatham WWTF

Alternatives Evaluation Summary:
Watershed Evaluations

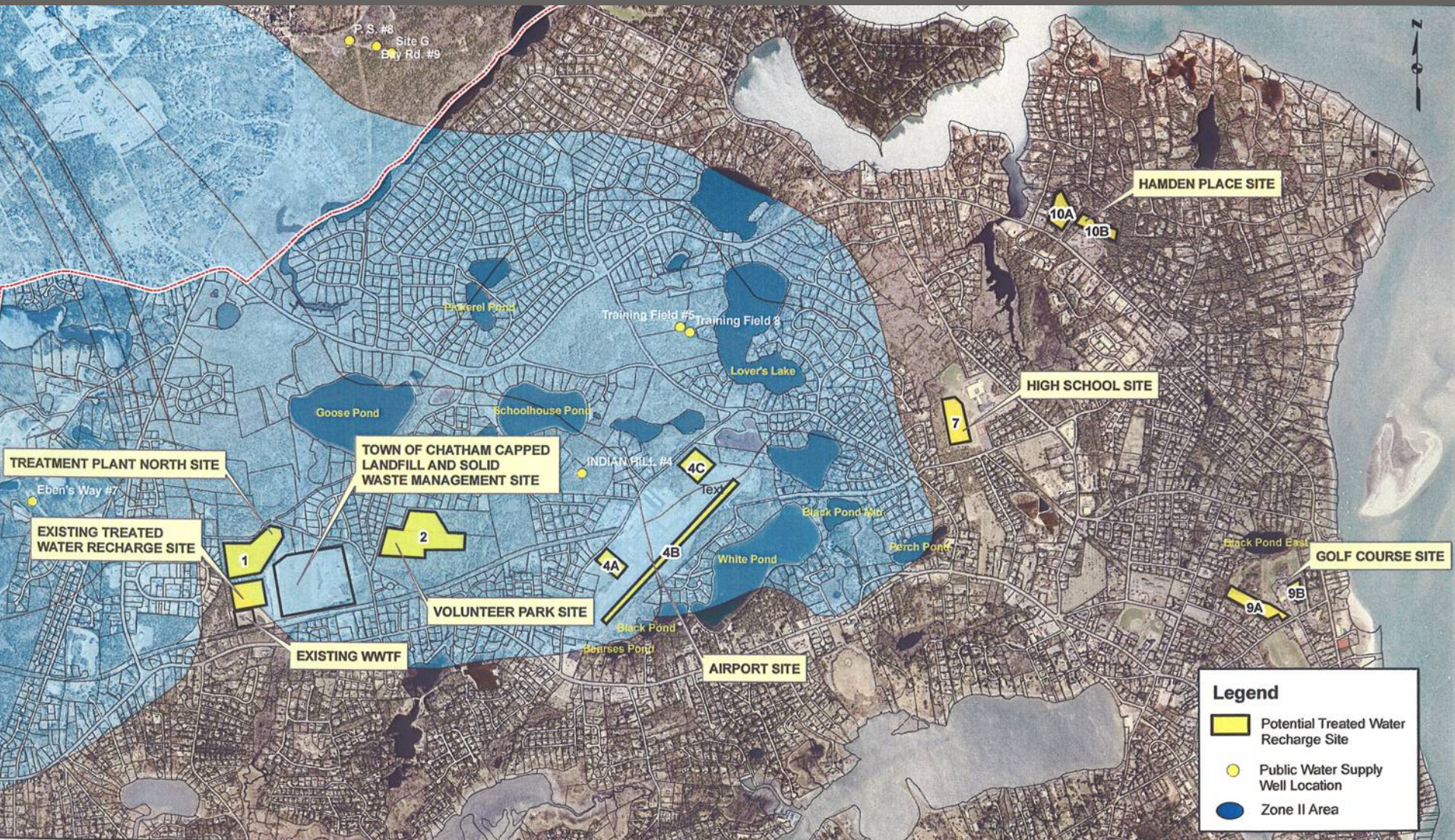
- Plan sewer extensions in these areas to meet the nitrogen - removal goals as well as the other Town goals of:
  - Low cost
  - Fiscal fairness
  - Fewer raised systems
  - Address needs in other Areas of Concern
- Townwide average annual flow is ~ 1.9 mgd



Alternatives Evaluation Summary:
Watershed Evaluations

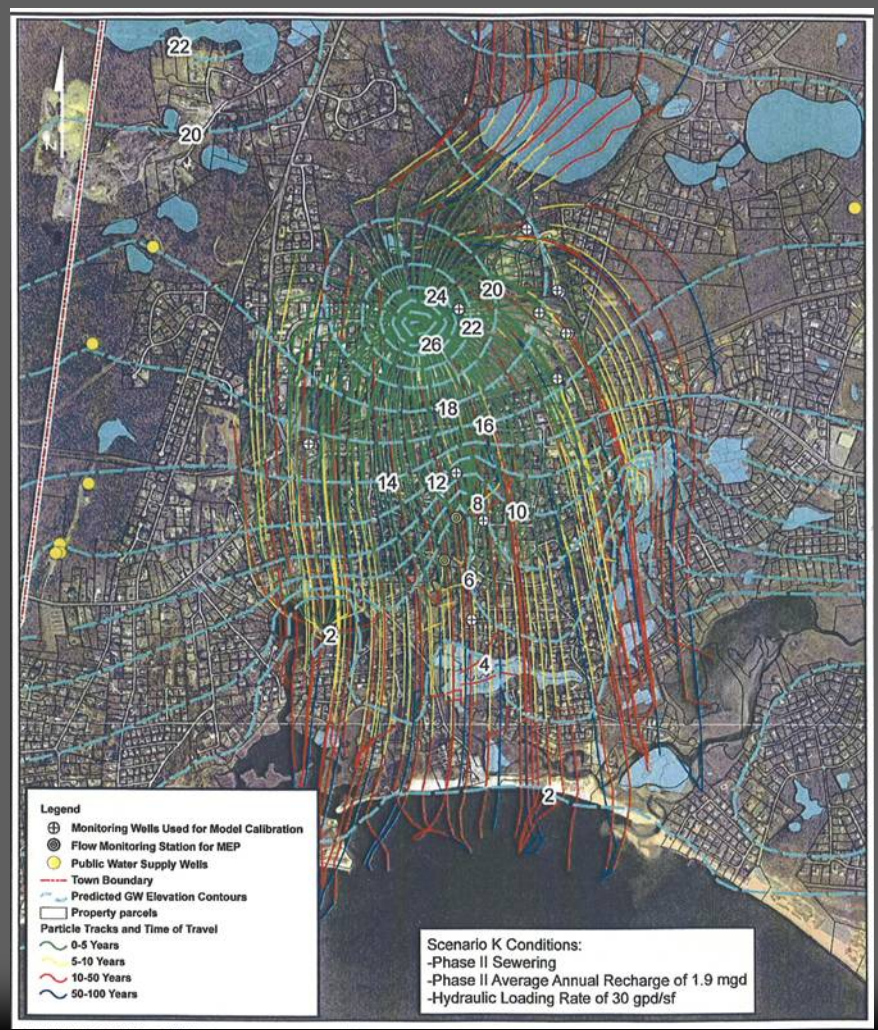
- Sewer extensions to meet the existing defined Nitrogen TMDLs
- Average annual flow is ~ 1.3 mgd

Alternatives Evaluation Summary:
Hydrogeologic and Site Evaluations



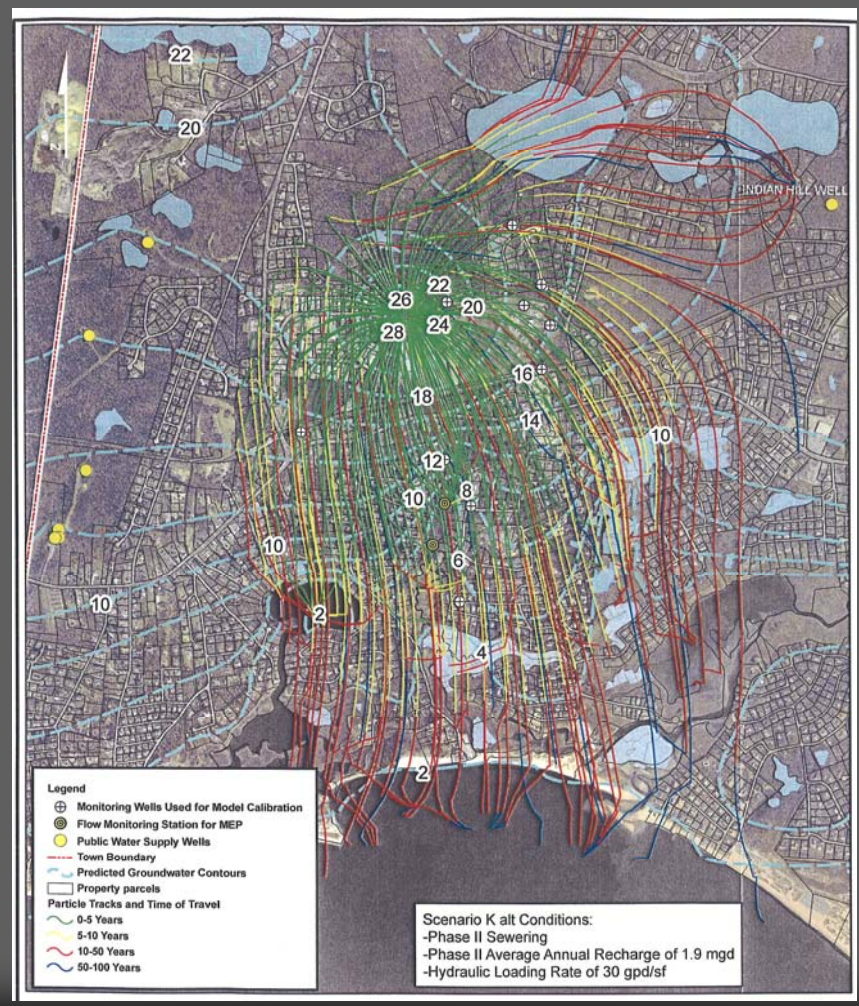
Alternatives Evaluation Summary:
Hydrogeologic and Site Evaluations

- Hydraulic load testing and groundwater modeling demonstrates that:
  - The WWTF site can accommodate an expansion to 1.9 mgd with no adverse impacts
  - The recharge will not adversely impact the capped landfill or the groundwater at the landfill site



Alternatives Evaluation Summary:
Hydrogeologic and Site Evaluations

- If Indian Hill Well is restarted in the future:
  - Approximately 8% (0.15 mgd) of the recharge would go to the well
  - Travel times of greater than 10 to 50 years



Alternative Plan Formation and Evaluation

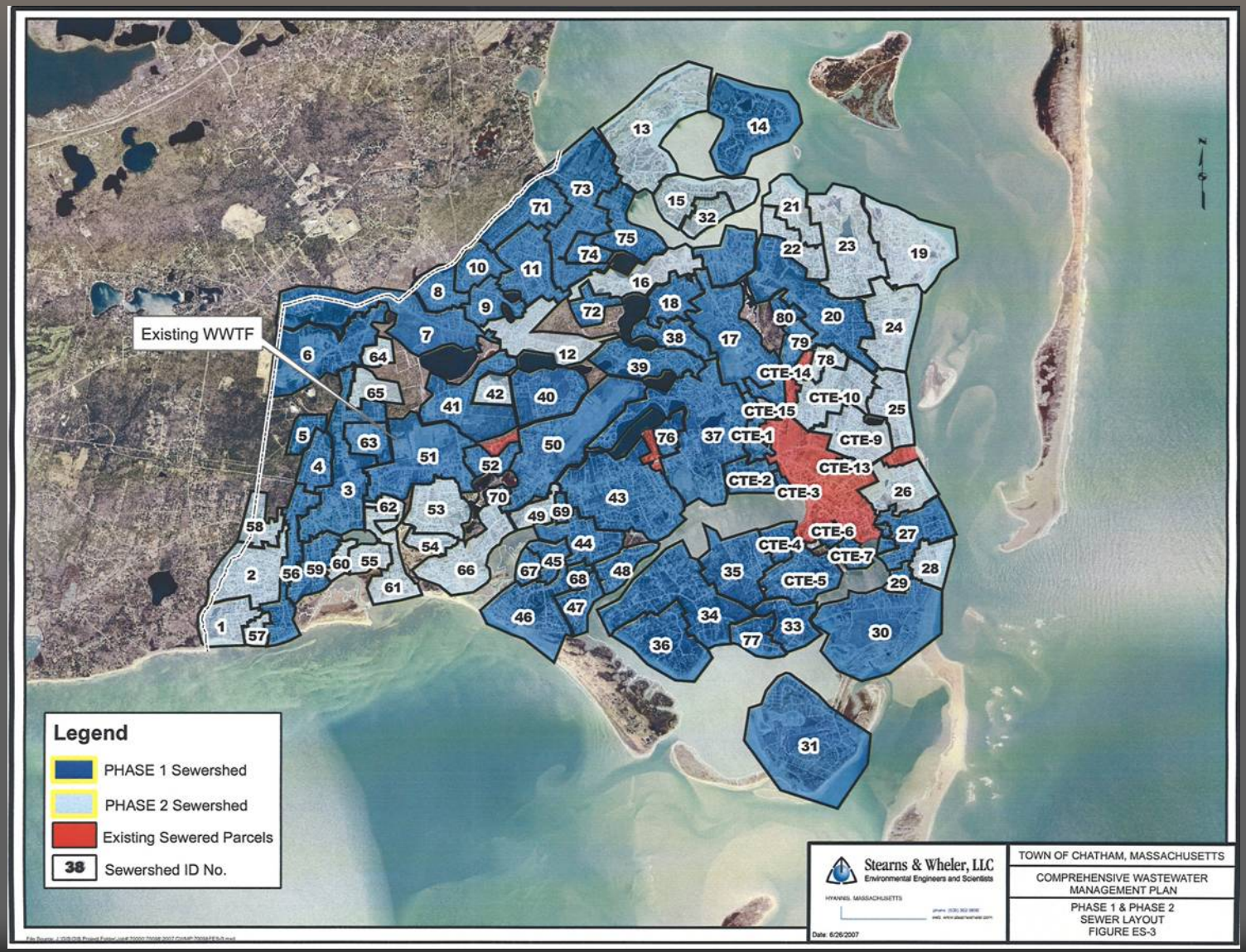
Plan No. 1: No Action Alternative

Plan No. 2: Combination of Sewers and I/A Technology in Selected Watersheds

Plan No. 3: Sewer Extension to Meet Nitrogen TMDLs

Plan No. 4: Town-Wide Sewer Extension

The Recommended Plan:
Phase 1 and 2 Sewer Extension Areas

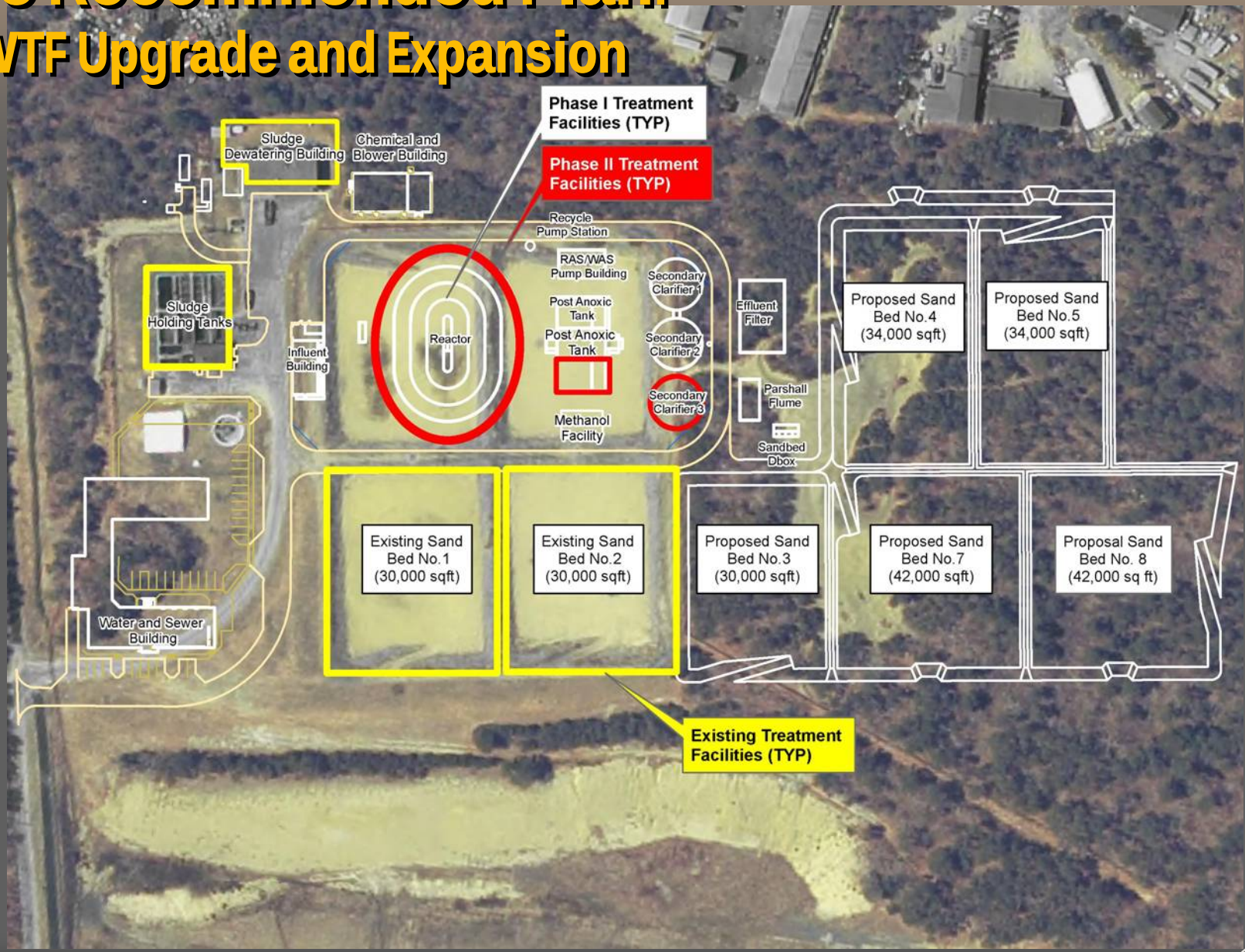


The Recommended Plan:

WWTF Flows

CONDITION	PHASE I FLOWS TOTAL (MGD)	PHASE II FLOWS TOTAL (MGD)
Startup Minimum Month Flow	0.08	0.8
Average Annual Flow	1.3	1.9
Average Summer Design Flow	1.8	2.7
Minimum Month Design Flow	0.8	1.2
Maximum Month Design Flow	2.1	3.1
Peak Day Design Flow	2.3	3.5
Peak Hourly Design Flow	3.5	5.1

The Recommended Plan:
WWTF Upgrade and Expansion



The Recommended Plan:
WWTF Upgrade and Expansion

The Recommended Plan:
Costs

Phase 1 Cost Summary	
Component	**Capital Costs (1)**
WWTF upgrade and expansion	
Construction Costs	$30,000,000
Contingencies	$6,000,000
Fiscal, Legal, and Engineering	$5,600,000
Total	**$42,000,000**
Collection System Expansion	
Construction Costs	$110,000,000
Contingencies	$28,000,000
Fiscal, Legal, and Engineering	$28,000,000
Total	**$170,000,000**

(1) *All costs are rounded to two significant digits and are referenced to a date of June 2007.*

The Recommended Plan:
Costs

Total Phase 1 and 2 Cost Summary (in Millions of Dollars)			
Component	**Capital Costs Phase 1(1)**	**Capital Costs Phase 2 (1)**	**Capital Costs Total (1)**
WWTF upgrade and expansion			
Construction Costs	$30	$9.0	$39
Contingencies	$6.0	$1.8	$7.8
Fiscal, Legal, and Engineering	$5.6	$2.1	$7.7
Total	**$42**	**$13**	**$55**
Collection System Expansion			
Construction Costs	$110	$60	$170
Contingencies	$28	$14	$42
Fiscal, Legal, and Engineering	$28	$14	$42
Total	**$170**	**$88**	**$250**

(1) *All costs are rounded to two significant digits and are referenced to a date of June 2007.*

The Recommended Plan:

Regulatory Review Process

- Massachusetts Environmental Policy Act (MEPA) Review Process
  - Six week review period for DCWMP/DEIR
  - Distribution to, and review by several state, regional and local agencies
- Cape Cod Commission (CCC) Development of Regional Impact (DRI) Review Process
- Joint Review Process

The Recommended Plan:
Implementation Schedule

Short-Term Implementation

- October 1, 2007: DCWMP/DEIR Submittal for MEPA,
- November 15, 2007: Receive MEPA comments and prepare Final CWMP/FEIR
- March 2008 : Projected Final CWMP/FEIR Submittal to MEPA,
- May 2008: Expected MEPA approval
- June 2008: Expected County DRI approval

The Recommended Plan:
Implementation Schedule

Phase 1 Implementation for WWTF Upgrade and Expansion

- January 2008 through January 2010:
  - WWTF design
  - SRF funding requests
  - MassDEP review
  - Bidding and award
- January 2010 through November 2011: Construction

The Recommended Plan:
Implementation Schedule

Phase 1 Implementation for Collection System Expansion

- 2010 through 2030 in phased approach:
  - Design
  - SRF funding requests
  - MassDEP review
  - Bidding and award
  - Construction

Next Steps

- Please review the Preliminary DCWMP/DEIR
- Provide questions to the TAG by September 5
- S&W will provide a summary memo of the questions and how they were addressed in the Final Draft
- Submittal of the DCWMP/DEIR to the MEPA review process is planned for October 1
  - Review period through November 8
  - MEPA comments to be delivered on November 15
- S&W will address comments and prepare the Final CWMP/FEIR for TAG and CAC review

QUESTIONS AND DISCUSSION

The Executive Summary of the Preliminary DCWMP/DEIR, and a copy of this presentation are located on the Town Web Site:

http://www.chatham-ma.gov/public_documents/ChathamMa_CWMPlan/CWMP